

The effect of encouraging a combined spinal epidural technique for cesarean delivery: a single center retrospective study

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Introduction

- Royal College of Anaesthetists has guidelines on how often neuraxial anesthesia should fail¹
- Prior to May 2019: single shot spinal anesthesia used exclusively at our hospital with failure rate of 2.5%
- May 2019: combined spinal anesthesia technique encouraged for cesarean deliveries

Methods

- Retrospective observational study design
- Subjects who had combined spinal epidural or single shot spinal anesthesia for cesarean delivery included
- Study investigator entered data from electronic medical record into REDCap

Results

	Single shot spinal (N=168)	Combined spinal epidural (N=804)	P value
BMI	33.8 (7.1)	36.7 (8.3)	<0.001*
History of cesarean delivery	99 (58.9%)	555 (69.0%)	0.011*
Training of operator	Intern/CA1: 86 (51.2%) CA2 or above: 82 (48.8%)	Intern/CA1: 541 (67.3%) CA2 or above: 264 (32.8%)	<0.001*
Dose of hyperbaric bupivacaine	11.25 (10.5-12.0)	10.5 (9.75-12.0)	<0.001*
Final anesthetic technique			0.679
<i>Regional anesthesia</i>	<i>134 (79.8%)</i>	<i>632 (78.6%)</i>	
<i>Regional anesthesia with adjunct med</i>	<i>30 (17.9%)</i>	<i>158 (19.7%)</i>	
<i>General anesthesia</i>	<i>4 (2.4%)</i>	<i>14 (1.7%)</i>	

- Cohorts did not differ in urgency of indication for cesarean delivery, time of day of cesarean delivery, or time from skin incision to wound closure
- 6 out of 14 combined spinal epidural failures did not have documentation of local anesthetic administered through epidural catheter
- Overall conversion to general anesthesia not statistically significant (p=0.533)
- Elective cesarean delivery conversion to general anesthesia rate: single shot spinal 0/86, combined spinal epidural 3/438 (0.7%)

Discussion

- **Overall effect of practice change: more complicated patients received combined spinal epidural, less complicated patients received single shot spinal. No difference in anesthetic outcomes**
- **Evaluated anesthetic outcomes by conversion to general anesthesia and use of anesthetic adjuvant agents**
- **Potential lost opportunity in not dosing six epidural catheters of failed combined spinal epidural anesthetics**
- **Limited by retrospective nature of data collection**
- **Will continue our current practice to allow residents to become proficient at single shot spinal technique**



References

1. Royal College of Anaesthetists. Raising the Standards: RCoA quality improvement compendium. 4th Edition 2020. London: RCoA, 2020